

Q-pole region uses a reaction force generated by a collision between the ion to be measured and the atmospheric gas.

10. (Amended) The Q-pole type mass spectrometer according to claim 2, characterized in that control on the motion of ion to be measured in the axial direction within the Q-pole region is carried out by setting the length of the Q-pole, kind and pressure of the atmospheric gas, potential of the ion source and potential on the axis of the Q-pole so that the ion to be measured is capable of passing the Q-pole region without receiving any additional force in the axial direction.

11. (Amended) The Q-pole type mass spectrometer according to claim 2, characterized in that control on the motion of ion to be measured in the axial direction within the Q-pole region is carried out using Coulomb force generated by space charge formed by the ion to be measured within the Q-pole region.

13. (Amended) The Q-pole type mass spectrometer according to claim 2, characterized in that control on the motion of ion to be measured in the axial direction within the Q-pole region is carried out using Lorentz force generated by high-frequency magnetic field synchronous with quadrupole high-frequency electric field applied in the diameter direction.

14. (Amended) The Q-pole type mass spectrometer according to claim 2, characterized in that control on the motion of ion to be measured in the axial direction within the Q-pole region is carried out using electromagnetic induction force generated by a magnetic field changing in its intensity with time passage applied in the diameter direction.